VA/DOD CLINICAL PRACTICE GUIDELINE FOR THE MANAGEMENT OF ISCHEMIC HEART DISEASE GUIDELINE SUMMARY MODULE C

STABLE ANGINA

Patients with known IHD (or with a high likelihood of IHD based on clinical factors) who have stable symptoms (referred to as angina) that suggest transient myocardial ischemia are managed within this module. Most commonly, angina is described as a squeezing, heavy, or aching substernal discomfort that is provoked by physical or emotional stress and is relieved by rest and/or sublingual nitroglycerine. Symptoms may also radiate to or be felt exclusively in the jaw, shoulders, arms, or back. Patients may also experience concurrent dyspnea, diaphoresis, or nausea. Occasionally, transient myocardial ischemia may manifest solely as one of these latter symptoms, especially as dyspnea on exertion; in such cases, the symptoms are described as "anginal equivalents" (AHCPR USA, 1994; ACC/AHA Stable Angina, 1999).

This module is not intended for the management of patients with unstable angina. Unstable angina should be suspected when patients have either prolonged angina (i.e., >20 minutes) or new onset or increasing angina, which occurs either at rest or with minimal exertion. These patients should be managed in Module B (Suspected Acute Coronary Syndrome: Unstable Angina/Non-ST-Segment Elevation MI).

VA access to full guideline: http://www.oqp.med.va.gov/cpg/cpg.htm
DoD access to full guideline: http://www.QMO.amedd.army.mil

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MANAGMENT OF ISCHEMIC HEART DISEASE

MODULE C: STABLE ANGINA

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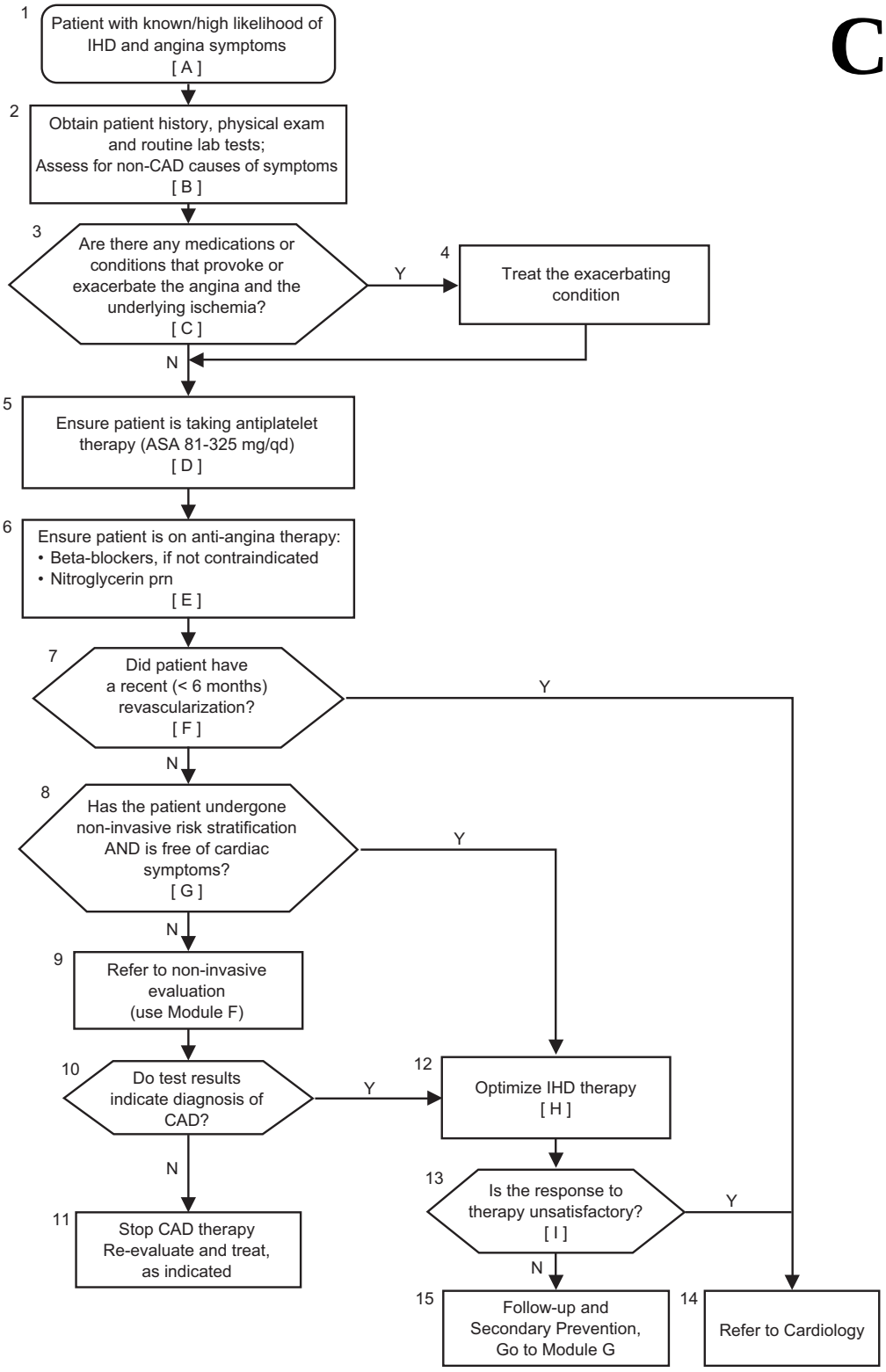

ASSESSMENT

Patient History, Physical Exam, And Routine Laboratory Tests; Assess For Non-Coronary Artery Disease (CAD) Causes Of Symptoms

Patients with IHD may also experience symptoms unrelated to transient myocardial ischemia, but which nonetheless raise concern regarding the possibility of angina and therefore pose diagnostic difficulties. Many conditions other than coronary disease present with chest pain or discomfort that mimic angina symptoms. The history and physical examination should be used to develop a differential diagnosis of the patient's symptoms.

Obtain the following history for all patients with suspected angina:

- A detailed chest pain history, to include character, frequency, location, duration, radiation of pain, and provoking and relieving factors (i.e., exercise, emotion, and response to sublingual nitroglycerine)
- History of prior myocardial infarction
- History of prior myocardial revascularization
- History of prior diagnostic testing for IHD
- Assessment for coronary risk factors (e.g., hyperlipidemia, diabetes, smoking, hypertension, and family history of premature coronary disease)
- History of symptoms suggestive of heart failure
- History of cerebral or peripheral vascular disease

History that may be helpful for the evaluation of potential non-cardiac causes for symptoms in some patients includes the following:

- Medications, over-the-counter drugs, and substance use
- Anemia (e.g., fatigue, weakness, bleeding disorders, menstrual flow, hematuria, hematochezia, and nutrition)
- Thyroid disease (e.g., diaphoresis, nervousness, insomnia, weight loss, and neck pain)
- Pulmonary disease (e.g., smoking, wheezing, coughing, pleuritic chest pain, exposure to tuberculosis, and hemoptysis)
- Gastrointestinal disorders (e.g., relationship between pain or discomfort and meals, melena, hematochezia, and heartburn)
- Other possible non-cardiac sources of chest pain or discomfort

Physical examination components include the following:

- Blood pressure, pulse rate and regularity, and respiratory rate
- Complete cardiac exam for the presence of cardiac enlargement, murmurs, extra heart sounds, etc.
- Evaluation of the carotid and jugular vessels for the presence of jugular venous distention, carotid bruits, and abnormal carotid pulsations
- Peripheral vascular evaluation, including assessment of pulse quality and presence of bruits
- Evaluation for peripheral edema
- Thyroid examination (e.g., tenderness and enlargement)
- Abdominal examination (e.g., bruits, tenderness, and masses)
- Pulmonary/thoracic examination (e.g., pulmonary congestion rubs, chest wall tenderness, and skin lesions)

Obtain the following laboratory tests, if not previously done:

- Complete blood count
- Fasting glucose
- Fasting lipid profile including triglycerides
- 12-lead electrocardiogram (ECG)
- Chest X-ray in patients with signs of heart failure, valvular heart disease, pericardial disease, or aortic dissection/aneurysm

Obtain additional laboratory tests, as clinically indicated, to include the following:

- Renal panel including electrolytes
- Liver Function Tests (LFTs)
- Thyroid Function Tests (TFTs)
- Drug screening
- Amylase/lipase

Features that are not characteristic of myocardial ischemia include the following:

- Pleuritic pain (i.e., sharp or knife-like pain brought on by respiratory movements or a cough)
- Primary or sole location of discomfort in the middle or lower abdominal regions
- Pain that may be localized at the tip of one finger, particularly over the left ventricular apex
- Pain reproduced with movement or palpation of the chest wall or arms
- Constant pain that lasts for many hours
- Very brief episodes of pain that last a few seconds or less
- Pain that radiates into the lower extremities

Table 1. Alternative Diagnoses to Angina for Patients with Chest Pain or Discomfort (adapted from ACC/AHA Stable Angina, 1999)

Non-ischemic Cardiovascular	Pulmonary	Gastrointestinal	Chest Wall	Psychiatric
• Aortic dissection • Pericarditis	• Pulmonary embolus • Pneumothorax • Pneumonia • Pleuritis	• Esophageal -Esophagitis -Spasm -Reflux • Biliary -Colic -Cholecystitis -Choledo-cholithiasis -Cholangitis • Peptic ulcer • Pancreatitis	• Costochondritis • Fibrositis • Rib fracture • Sternoclavicular arthritis • Herpes zoster (before the rash)	• Anxiety disorder - Hyperventilation - Panic disorder - Primary anxiety • Affective disorders (e.g., depression) • Somatoform disorders • Thought disorders (e.g., fixed delusion)

Medications Or Conditions That Provoke Or Exacerbate The Angina And The Underlying Ischemia

In addition to non-CAD conditions, whose symptoms mimic the symptoms of angina, there are many conditions that may provoke or exacerbate angina and the underlying ischemia, even though the existing coronary disease is not otherwise significant. In particular, conditions that increase oxygen demand or decrease oxygen supply may provoke ischemic symptoms in patients who otherwise would not have symptoms, if based exclusively on atherosclerotic lesions.

Table 2. Conditions and Medications Provoking or Exacerbating Ischemia (adapted from the ACC/AHA Stable Angina Guidelines, 1999)

Increased Oxygen Demand	Decreased Oxygen Supply
Noncardiac • Hyperthermia • Hyperthyroidism • Sympathomimetic toxicity (e.g., cocaine use) • Hypertension • Anxiety • Arteriovenous fistulae **Cardiac** • Hypertrophic cardiomyopathy • Aortic stenosis • Dilated cardiomyopathy • Tachycardia - Ventricular - Supraventricular **Medications** • Vasodilators • Excessive thyroid replacement • Vasoconstrictors	**Noncardiac** • Anemia • Hypoxemia - Pneumonia - Asthma - Chronic obstructive pulmonary disease - Pulmonary hypertension - Interstitial pulmonary fibrosis - Obstructive sleep apnea • Sickle cell disease • Sympathomimetic toxicity (e.g., cocaine use) • Hyperviscosity - Polycythemia - Leukemia - Thrombocytosis - Hypergammaglobulinemia **Cardiac** • Aortic stenosis • Hypertrophic cardiomyopathy **Medications**

TREATMENT

Ensure Patient Is Taking Antiplatelet Therapy.

Aspirin (ASA) 81-325 mg qd

Aspirin (ASA) is known to be effective for reducing mortality in patients with CAD. Use of aspirin has been associated with a decrease in nonfatal MI, non-fatal stroke, and vascular death. The doses used ranged from 81 mg to 325 mg per day and doses throughout this range appeared to have similar effect

For patients who require warfarin therapy, aspirin may be safely used at a dose of 80 mg/day

If use of aspirin is contraindicated, **clopidogrel** may be used. Although it has not been studied in stable angina patients, in a large randomized controlled study of more than 19,000 patients with a history of ischemic stroke, MI, or atherosclerotic peripheral arterial disease, clopidogrel (75 mg daily) demonstrated a relative-risk reduction of 8.7% when compared with aspirin (325 mg daily)

Beta-Blockers

Beta-blockers may be prescribed immediately, in the absence of known contraindications. Beta- blockers are effective in controlling exercise-induced angina. In addition, they have been shown to decrease mortality in post-MI patients. In the absence of contraindications, all patients who have had an MI should be on beta-blockers. In patients with chronic obstructive pulmonary disease, including those with a reactive airway component, beta-blockers with selective beta-1 antagonist properties may be used judiciously

Nitroglycerin As Needed (PRN)

Short-acting nitroglycerine in sublingual, buccal, or spray form is known to be effective in the treatment of symptoms of acute angina, on an as-needed basis.

Calcium Channel-Blockers

If optimal doses of beta-blockers or long-acting nitrates fail to adequately control symptoms, calcium channel-blocking agents may be used as adjunctive therapy. Calcium channel-blocking agents may be useful as a substitute for a beta-blocker, particularly in patients who are intolerant of beta-blocking agents or nitrates. Short-acting dihydropyridine should be avoided.

ACE-Inhibitors

Angiotensin-converting enzyme-inhibitors (ACE-inhibitors) also may be added to the regimen of high-risk patients to improve mortality, although ACE-inhibitors should not be considered anti-anginal drugs.

Lipid-lowering Therapy

In patients with established coronary disease, including chronic stable angina pectoris, dietary intervention and treatment with lipid-lowering medications should not be limited to those with extreme values. The clinical trial data establish the benefits of aggressive lipid-lowering treatment for most coronary disease patients, even when LDL cholesterol is within a range considered acceptable for patients in a primary prevention setting. For patients with established coronary disease, nonpharmaceutical treatment should be initiated when LDL-cholesterol is >100 mg/dL, and drug treatment is warranted when LDL-cholesterol is >130 mg/dL.

Did Patient Have A Recent (<6 Months) Revascularization?

Patients who have had a recent revascularization procedure and have recurrent angina are a special subset of patients with stable angina. Recurrent angina following a revascularization procedure may represent either restenosis, following percutaneous coronary intervention (PCI), or graft failure, following a coronary artery bypass graft (CABG). Therefore, patients who present with recurrent typical angina within 6 months of revascularization should be referred to a cardiologist for further evaluation and possible coronary angiography.

Non-Invasive Risk Stratification

Patients with known IHD and angina should undergo non-invasive risk stratification. A stress test is not required if:

- The patient has had a prior stress test (or recent angiography).
- The patient has been free of angina symptoms since the most recent stress test or angiography.

Risk-stratification generally includes both cardiac stress testing and an assessment of resting left ventricular function. *Routine periodic stress testing (e.g., yearly treadmill) is not indicated in patients with stable angina.*

Stress tests will not be of benefit to the following patients for whom the results of stress testing are unlikely to change the treatment regimen:

- Patients with limited life expectancy from other conditions
- Patients with comorbidities that limit therapy or magnify the risk of procedures
- Patients with an established diagnosis of CAD, who are unwilling to consider alternatives to medical therapy

Response To Therapy

Even after optimizing anti-anginal medications, a patient may require revascularization if the symptoms are not resolved or if the patient is dissatisfied with his or her functional status or symptoms.

In addition to reducing mortality, the goal of IHD therapy should be to return the patient to as nearly a normal quality of life as possible. Patients that do not meet this goal of medical therapy and are willing to accept the risks of revascularization, in the hope of meeting this goal, may be offered invasive evaluation.

The patient for whom medical therapy results in satisfactory control of symptoms should be followed periodically. The follow-up of the IHD patient, focusing on interventions for secondary prevention, is included in Module G.